

Notice of Allowability

Application No.

09/918,392

Examiner

Marie C. Ubiles

Applicant(s)

BENNING ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.


1. ☒ This communication is responsive to 7/30/01.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☒ The drawings filed on 17 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


WILLIAM J. DEANE, JR.
PRIMARY EXAMINER

Marie C. Ubiles
Patent Examiner
703-305-0684

DETAILED ACTION

EXAMINER'S AMENDMENT

1. The following is an informal Examiner's amendment. Please substitute the Related Application paragraph in Page 1, lines 4-12 of the Specification with the following:

Related subject matter is disclosed in the following applications filed concurrently and assigned to the same assignee hereof: U.S. Patent Application No. 09/918,391 entitled, "Space Time Spreading and Phase Sweep Transmit Diversity", inventors Roger Benning, R. Michael Buehrer, Paul A Polakos and Rober Atmaram Soni; U.S. Application Serial No. 09/918,393 entitled, "Biased Phase Sweep Transmit Diversity", inventors Roger Benning, R. Michael Buehrer and Robert Atmaram Soni; and U.S. Patent Application Serial No. 09/918,086 entitled, "Split Shift Phase Sweep Transmit Diversity", inventors Roger Benning, R. Michael Buehrer, Robert Atmaram Soni and Paul A. Polakos.

Allowable Subject Matter

2. Claims 1-24 are allowed.
3. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1 and 7 recite the method for "signal transmission" comprising the recited "STS/OTD signal belonging to an STS/OTD pair", "splitting a signal s(1)", "splitting a

signal $s(2)$ ", "phase sweeping the signal $s(1a)/s(1b)/s(2a)/s(2b)$ " and "adding the phase swept signal [...] to the signal [...] to produced a summed signal $s(3)/s(4)$ ".

Claims 13 and 19 recite the base station comprising the recited "a first splitter for splitting a signal $s(1)$ ", "a second splitter for splitting a signal $s(2)$ ", "a first multiplier for phase sweeping the signal $s(1b)/s(1a)$ ", "a second multiplier for phase sweeping the signal $s(2b)/s(2a)$ ", "a first adder [...] to produce a summed signal $s3$ " and "a second adder to produce a summed signal $s4$ ".

No prior art was found teaching individually, or suggesting in combination, the features of the applicant's invention, specifically *"...splitting a signal...belonging to an STS/OTD pair; adding the phase swept signal... to the signal... to produce a summed signal $s(3)/s(4)$; a first multiplier for phase sweeping the signal $s(1b)/s(1a)$; a second multiplier for phase sweeping the signal $s(2b)/s(2a)$; a first adder [...] to produce a summed signal $s3$; and; a second adder to produce a summed signal $s4$ ".*

Dabak et al. (US 6,424,679) discloses a method and circuit for phase sweeping a split phase sweep signal and adding the phase sweep signal with a separate phase sweep signal to produce a combined signal; however Dabak et al. system lacks the "STS/OTD signal belonging to an STS/OTD pair", and is in fact, directed to a STTD (Space Time Transmit Diversity) signal.

Whinnett et al. (WO 00/51265) discloses a circuit and method for processing STS signals wherein a two different signals are split, each split signal is phase sweep and added to produced a combined signal.

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However, in Whinnett et al. system the added phase sweep belong to the same original signal and not it is not a cross addition of phase sweep signal. Further, Whinnett et al. system lacks the "STS/OTD signal belonging to an STS/OTD pair".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie C. Ubiles whose telephone number is (703) 305-0684. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (703) 305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marie C. Ubiles
February 4, 2005.


WILLIAM J. DEANE, JR.
PRIMARY EXAMINER